

**PRODUCT SPECIFICATION**

TITLE	DATE	REV
Product Requirements	29 Sep 2020	0

# Hardware in the Loop Simulation Product Requirements

Simulation Sages

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## Document History

Rev Number	Date	Modified By	Reason
0	29Sep2020	David Lowe	Initial Release

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# 1 Objective

The objective of this document is to document the requirements for the Hardware in the Loop Simulation Design Project.

# 2 Scope

The scope of this document is to define the requirements for the end product.

# 3 References

## 3.1 Cited Documents

This is place to cite any relevant standards, regulations, etc. relevant to the requirements...

## 3.2 Acronyms

PV	Photovoltaic
RSCAD	Real time Simulation Computer Assisted Design
RTAC	Real Time Automation Controller
RTDS	Real Time Digital Simulator
SEL	Schweitzer Engineering Laboratories

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## 4 Functional Requirements

### ***4.1 User Interface Requirements***

The user shall interface with the product using RSCAD software and RTDS hardware.

### ***4.2 What it should do***

The product will provide a learning environment suitable to be used as a class semester laboratory session for electrical engineering students. It will give students experience with industry hardware and software as well as help them become familiar with the behavior of a small power system when PV inverters are introduced to the system.

## 5 Mechanical Requirements

None

## 6 Electrical Requirements

### ***6.1 Operational Voltage***

During operation the RTDS will be connected 120V AC wall power. The lab computer and monitor must also be connected to 120VAC wall power.

## 7 Software Requirements

### ***7.1 User Interface***

The user shall access the simulation environment using RSCAD which will interface with the RTDS. AcSELeRator RTAC software will also be used to interface and program the SEL RTAC.

## 8 Environmental Requirements

### ***8.1 Temperature***

Product shall be operated at room temperature.

## 9 Regulatory Requirements

### ***9.1 UL Requirements***

Operation of this product will remain within manufacturer specifications

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## 10 Cost Requirements

None

## 11 Schedule Requirements

The following are the major Project Milestones:

Portfolio Review	8-Oct-20
1st Logbook Review	8-Oct-20
Design Validation Plan	22-Oct-20
Wikipage Setup	5-Nov-20
Value Proposition	29-Oct-20
2nd Logbook Review	12-Nov-20
Concept Design Review	13-Nov-20
Team Member Citizenship	20-Nov-20
Snapshot Day 2	1-Dec-20
Project Portfolio	11-Dec-20
Wikipage	11-Dec-20
Logbook	11-Dec-20
Engineering Release Review	2-Feb-21
Snapshot Day 3	5-Mar-21
Design Expo	30-Apr-21